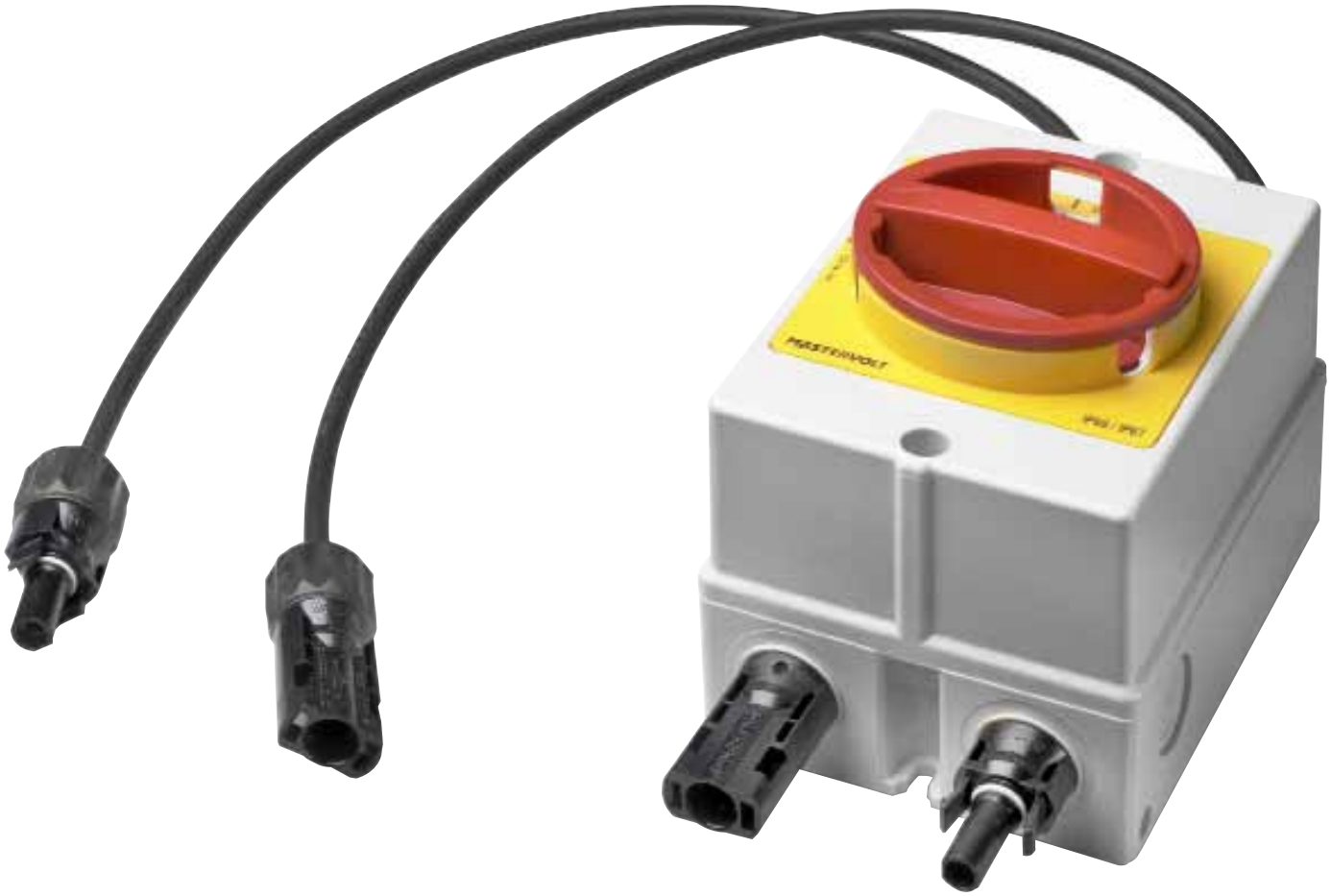
Soladin Web DC Switch



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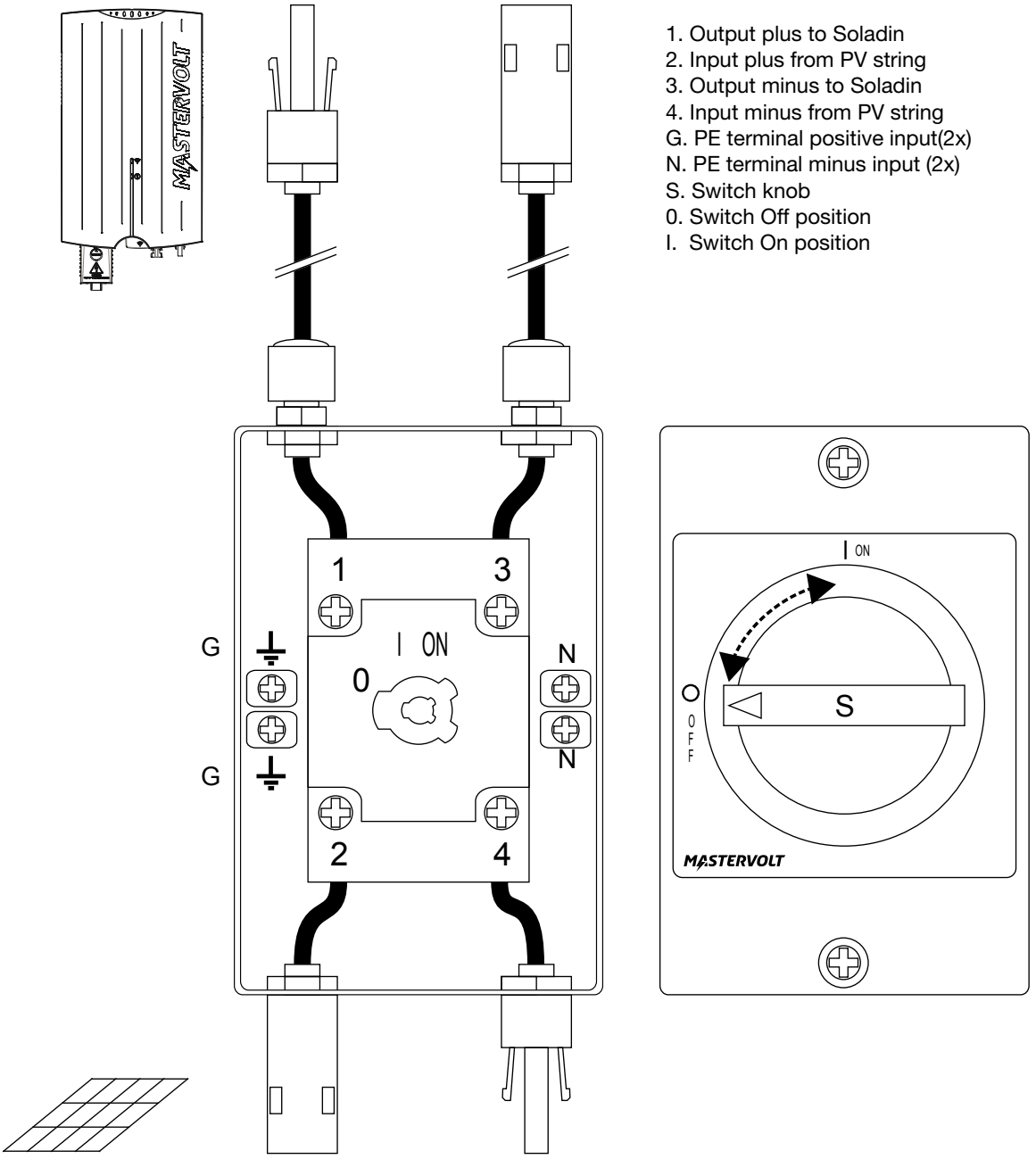
MASTERVOLT
THE POWER TO BE INDEPENDENT

OVERVIEW SOLADIN WEB DC SWITCH



1. Output plus to Soladin
2. Input plus from PV string
3. Output minus to Soladin
4. Input minus from PV string

G. PE terminal positive input(2x)
N. PE terminal minus input (2x)
S. Switch knob
0. Switch Off position
I. Switch On position

Figure 0-1: Overview of the Soladin Web DC Switch

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1 GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION
The Soladin Web DC Switch disconnects both the positive and negative cable going from the PV string to the Soladin Web. It is suitable for the Soladin 700 Web, 1000 Web and 1500 Web.

1.2 USE OF THIS MANUAL
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Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Mastervolt is prohibited.
This manual serves as a guideline for the safe and effective installation of the Soladin Web DC Switch:
- For the electrician this manual provides directions for the installation, operation and commissioning.
- For the end-user it instructs in operation and maintenance.
- Every person who works with the apparatus should be familiar with the contents of this manual, and must carefully follow the instructions contained herein.
- Store the manual in a user accessible place.

1.3 VALIDITY OF THIS MANUAL
All the specifications, provisions and instructions contained in this manual apply solely to the Mastervolt-delivered standard version of the Soladin Web DC Switch.

1.4 GUARANTEE SPECIFICATIONS
Mastervolt assures the product guarantee of this DC Switch during five years after your purchase, on the condition that all instructions and warnings given in this manual are taken into account during installation and operation. Installation must be carried out by a qualified electrician.The warranty is limited to the costs of repair and/or replacement of the product by Mastervolt only. Costs for installation labour, shipping of the defective parts and loss of energy revenues are not covered by this warranty. For making an appeal on warranty you can contact your supplier directly, stating your complaint, application, date of purchase and part number / serial number.

1.5 LIABILITY
Mastervolt accepts no liability for:
- consequential damage of using the Soladin Web DC Switch;
- possible errors in the manuals and their results.

1.6 CHANGES TO THE SOLADIN WEB DC SWITCH
Changes to the Soladin Web DC Switch may be carried out only after the written permission of Mastervolt.

1.7 IDENTIFICATION LABEL
The identification label is positioned at the right side of the Soladin Web DC Switch.

CAUTION!
Never remove the identification label.

1.8 TRANSPORT, LIFTING AND STORAGE
Ensure adequate and secure packaging during transportation of the DC Switch. Always use suitable handling equipment for transportation.

1.9 INSTALLATION ENVIRONMENT
Obey the following stipulations during installation:
- The Soladin Web DC Switch is designed for both indoor and outdoor use, according to protection class IP66;
- Ambient temperature: -20 to 40°C;

1.10 DC CONFIGURATION
The solar or DC side of the system consists of several photovoltaic (solar) modules, connected as “PV string”. These strings consist of a plus (+) and a minus (–) connection which can be connected to the Soladin inverter via the Soladin Web DC Switch. The cabling between the DC Switch and the inverter must be double insulated and suitable for 400 V DC and 15A DC.

1.11 PV INSTALLATION REQUIREMENTS
The PV installation has to meet next specifications:
- The maximum open circuit string voltage at lowest possible temperature of the string may not exceed 400V;
- Double isolated PV wiring, fitted with Amphenol Helios H4 connectors (at the inverter side) must be used;
- The maximum power connected to the switch may not exceed 400Vdc/ 15Adc for each output.

Do not install the Soladin DC Switch if the solar system does not comply with the stipulations mentioned above.

2 SAFETY GUIDELINES AND WARNINGS

2.1 WARNINGS AND SYMBOLS

Safety instructions and warnings are marked in this manual by the following pictograms:

A procedure, circumstance, etc which deserves extra attention.

CAUTION!
Special information, commands and prohibitions in order to prevent damage.

WARNING
A WARNING refers to possible injury to the user or installer or significant material damage to the Soladin Web DC Switch if the installer / user does not (carefully) follow the stated procedures.

2.2 USE FOR INTENDED PURPOSE

Use the Soladin Web DC Switch only in installations that meet these qualifications:
• in permanent installations;
• the electrical installation must meet the applicable regulations and standards, must be carried out correctly and must be in a good condition;
• according to the technical specifications.

WARNING
Never use the Soladin Web DC Switch in situations where there is danger of gas or dust explosion or potentially flammable products!
Use of the Soladin Web DC Switch other than as mentioned under § 2.2 is not considered to be consistent with the intended purpose. Mastervolt does not hold itself liable for any damage resulting from the above.

2.3 ORGANISATIONAL MEASURES

The installer / user must always: have access to this manual; be familiar with the contents of this manual. This applies particularly to Chapter 2, Safety Guidelines & Warning.

2.4 INSTALLATION, MAINTENANCE AND REPAIR

WARNING
As high voltages exist, only allow installation, maintenance and repair of the Soladin Web DC Switch and changes in your electrical system to be carried out by qualified electricians. Connections and safety features must be executed according to the locally applicable regulations. If such are required, only use original spare parts

Use the special Amphenol tool when taking the Amphenol connectors apart.

2.5 WARNING OF SPECIAL DANGERS

The voltages present at both sides of the Soladin Web DC Switch and inside the enclosure are not safe to touch. Do not work on the Soladin Web DC Switch and/or the electrical installation if it is still connected to the PV panels or the inverter. Allow time for the inverter capacitors to de-energize. Verify de-energizing of all connections using a suitable metering instrument.Make sure two persons are present when working on an installation, at least until the installation has been de-energized and verified by a suitable metering instrument.

3 INSTALLATION AND COMMISSIONING

CAUTION!
Until all wiring has been verified to be de-energized for safety reasons, at least two persons are required during installation. Verify that all wiring is disconnected from any energy source during the entire installation. Use suitable testing equipment.

Read chapters 2 and 4 prior to installation.

Short circuiting, miswiring or reverse polarity may lead to damage to the Soladin Web DC Switch, the inverter, the cabling and/or the connections.

3.1 THINGS YOU NEED FOR INSTALLATION

Make sure you have all the parts you need to install the Soladin Web DC Switch:

- This printed user's manual (included).
- 2 screws to fix the enclosure to the wall.
- Screwdriver to fix the Soladin Web Switch to the wall
- Tools to install the optional grounding wiring.

3.2 INSTALLATION STEP BY STEP

1 Fix the Soladin Web DC Switch to the wall, the input facing downwards. The screw holes are positioned at the center, 110 mm apart. Use suitable screws and plugs.
2 Mount the optional resistance f
4 Connect wiring from the inverter, check the polarity.
5 Connect the wiring from the PV strings.
6 Check string voltages and polarities.
7 Close the lid securely to prevent moist leaking inside. Turn the screws clockwise to tighten the lid.

Fix the top screw first, hang the Soladin Web Switch into position. Then fix the bottom screw.

3.3 COMMISSIONING AFTER INSTALLATION

Move the DC switch to the ON position (vertical).

3.4 DE-COMMISSIONING

If it is necessary to take the Soladin Web DC Switch out of operation, follow these steps:

1 Turn the switch to the 0 (Off) position
2 Disconnect the PV connectors first
3 Disconnect the Soladin connectors
4 Disconnect the optional grounding
Now the DC Switch can be taken off the wall safely.

3.5 MAINTENANCE

If necessary, use a soft clean cloth to clean the enclosure of the Soladin Web DC Switch. Never use any liquids, acids and/or scourers. Examine your electrical installation on a regular base, at least once a year. Defects such as loose connections, burnt wiring etc. must be corrected immediately.

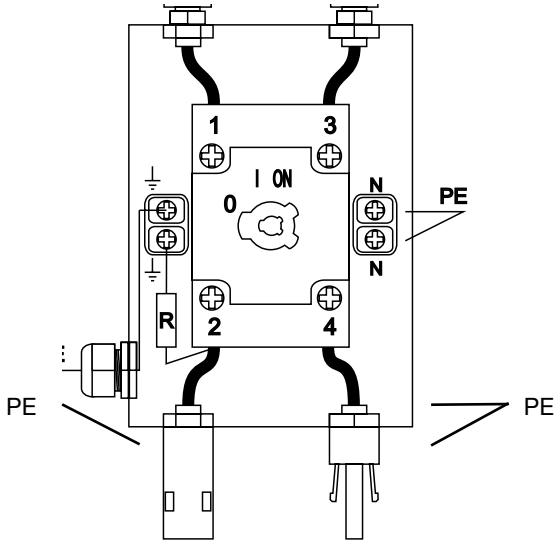

Figure 3-1: Grounding by means of a resistor

3.6 PV GROUNDING

Depending on the PV panel type, functional grounding is required. The Soladin Web DC Switch includes material to ground either the inverter input plus or minus. See figure 3-1. Use the 100 k Ohm resistor R to connect 2 or 4 to PE.

Follow these steps, using figure 3-1:

1. Make sure no DC is present, refer to chapter 2.
2. Connect the PE terminal to your PE connection.
3. Connect the 100 k Ohm resistor with the PE terminal.
4. Connect the other side of the resistor to 2 (positive input) or 4 (minus input).

4 TECHNICAL DATA

4.1 TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS	
Model	Soladin Web DC Switch
Part number	130500640
Operating temp.	-20°C ... 45°C / -4°F ... 113°F
Protection degree	IP 66
Relative humidity	4-90% condensing
Safety class	Class II
Weight	450 g including cables
Dimensions	See figure 4-1
SOLAR IN/ OUTPUT (DC)	
Maximum input /output voltage	400 V DC
Maximum input / output current	15A
String connections	1 string with DC switch in positive and minus cable

4.2 ORDERING INFORMATION

Part number	Description
130500640	Soladin Web DC Switch, DC switch to be connected between PV array and Soladin Web
130000700	Soladin 700 Web
130001000	Soladin 1000 Web
130001500	Soladin 1500 Web

Mastervolt offers a wide range of products for both grid connected and independent autonomous electrical installations.
See our website www.mastervolt.com for an extensive overview of all our products.

4.3 OUTLINE DRAWINGS

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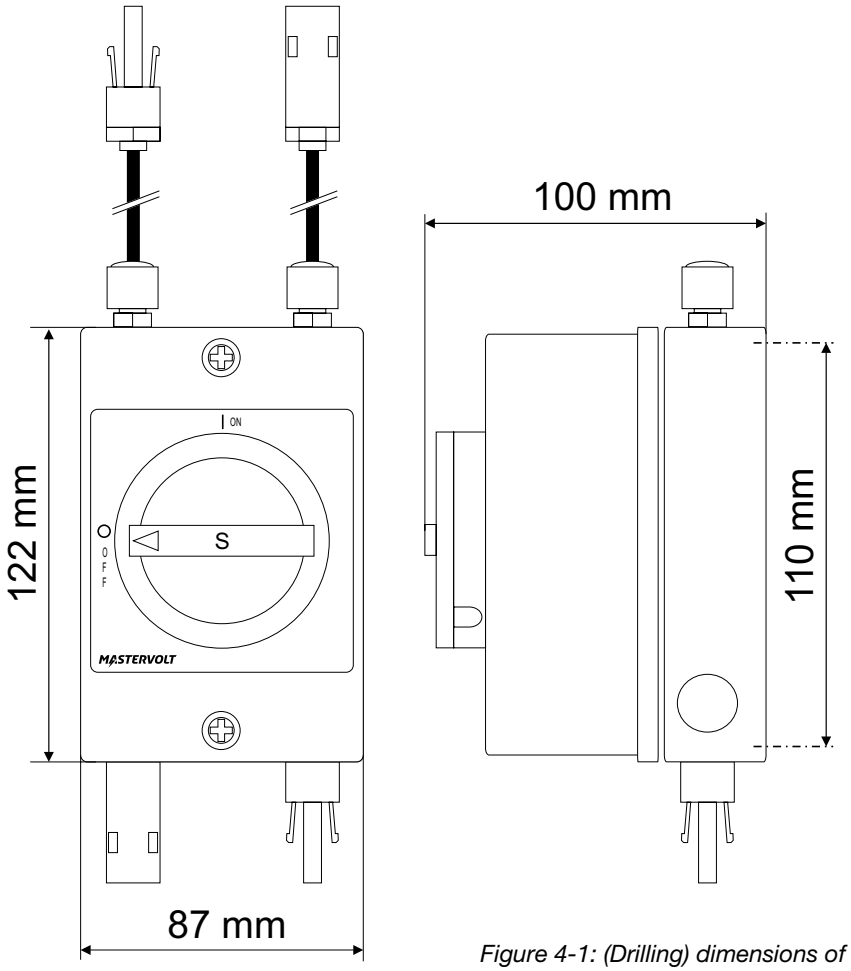

Figure 4-1: (Drilling) dimensions of the Soladin Web DC Switch in mm

5 EC DECLARATION OF CONFORMITY

We,
Manufacturer Mastervolt
Address Snijdersbergweg 93
1105 AN Amsterdam
The Netherlands

Declare under our sole responsibility that the product:

Article number	**Product name**
130500640	Soladin Web DC Switch

is in conformity with the provisions of the following EC directives:

2006/95/ec	LV directive
2004/108/ec	EMC directive
2011/65/eu	ROHS directive

The following harmonized standards have been applied:
iec 60947-1
iec 60947-3

Amsterdam,

Ing. D.R. Bassie

Product Manager Solar

July 4th 3013